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Approved For Release 2002/08/20 : CIA-RDP68B00724R000100100013-6

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## NRO REVIEW COMPLETED

2920-66  
Copy 16 of 16

16 December 1966

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MEMORANDUM FOR: (See Distribution)

SUBJECT: U-2R Mock-Up Review 28-29 November 1966

1. A U-2R mock-up review was held at Lockheed Burbank Facilities for the following specific purposes:

a. Establish a base line configuration for the U-2R cockpit.

[REDACTED]

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c. Establish actions required for the logistic support of the U-2R vehicle with AGE, spares and hardware, through production, flight test and training phases.

2. Mr. C. L. Johnson opened the conference with general comments regarding design features, characteristics and expectations of the U-2R. This was followed by a ship-side inspection of the U-2R cockpit mock-up by all attendees. The conference was next divided into "working groups" of specialists, who proceeded into their areas of interest.

3. The second day of the conference was designed to obtain a consensus from the working groups and combine these views into a final position. These included pilot comments and recommendations for the cockpit instrumentation and configuration, as well as those affecting the logistics support aspects.

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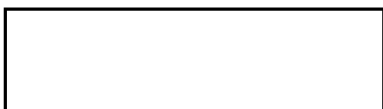
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GROUP 1  
Excluded from automatic  
downgrading and  
declassification

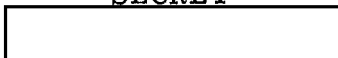
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
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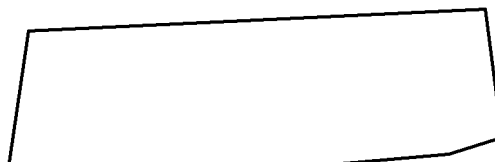
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4. Attachments to this memorandum present details of the recommendations and actions developed by the working groups.

5. An engine meeting is scheduled for 15 January 1967 to discuss the propulsion system. As with all other meetings on this Article, representatives from SAC, AFRDR, Project Headquarters and selected specialists will be expected to insure a command base line configuration is developed.

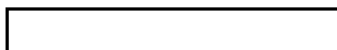


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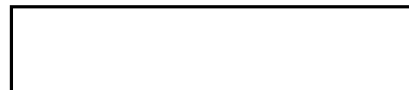
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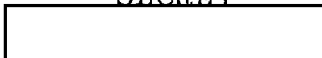
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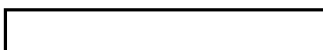
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MD/M/OSA/  (15 December 1966)

Distribution:

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- #9 - D/O/OSA (w/att)
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- #11- AFRDR (w/att)
- #12- Detachment "G" (w/att)
- #13- SPO (Wright Patterson AFB) (w/att)
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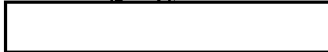


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ATTACHMENT I

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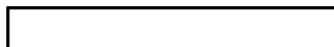
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MANUFACTURER'S MODEL SPECIFICATION REPORT NBR SP-1125

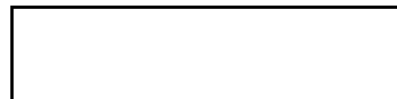
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Specifications outlined in SP-1125 were agreed to with the exception of any deviations noted in following attachments.

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ATTACHMENT II

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### PILOT INSPECTION OF COCKPIT

Below are listed comments, recommended changes and action resulting from pilots inspection of cockpit.

1. Instrument panel switches hard to reach with suit inflated.

Action: Move instrument panel aft  $1\frac{1}{2}$ " leaving a recess in the area of the control column and head.

2. Would like to be able to use partial pressure suit on some flights if possible.

Action: Investigate requirements to do this with the SR-71 seat and seat pack and what adapter harness would be required to do this.

3. Would like to have up to 2" forward seat adjustment (ground adjustment).

Action: Investigate possibility of moving seat and rails forward 2" (by use of adapter fittings) on a ground adjustment. Will have to look at control column pivot!

4. Rear view mirrors required.

Action: Locate inside mirrors to check "Pogo" drop. Check to see if inside mirrors provide aft visibility; if not, look at outside mirror.

5. Left circuit breaker panel difficult to get to, especially with suit inflated. However, it is acceptable. R.H. circuit breaker panel O.K.

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6. Switch panel immediately aft of throttle: Move all switches up approximately 2". Engine bleed valve switch - 3-way lever lock, toggle. Hatch heat switch - lever lock. Cockpit defrost control - push for heat, pull for off.

Action: Will conform to above recommendation.

- 7. Map case - O.K.
- HF Panel - O.K.
- UHF Panel - O.K.
- Gust Control - O.K.
- Face Heat Control - O.K.
- Flap Switch - O.K.

Rotate fuel shut-off switch 90° so that cover opens inboard.

Action: Will conform.

- 8. AIC-10 (or AIC-18) Interphone Box location.

Action: Will add Interphone Box immediately aft of 718T HF Control (or aft of VHF Control on VHF installation).

- 9. Some rotation of the throttle grip desirable.

Action: Will look at possibility of providing approximately 10° rotation of the throttle grip about its axis.

- 10. Sub-Panel on left side.

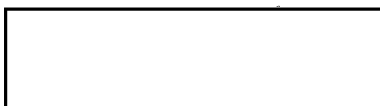
Action: Switch positions of Oxygen Panel and IFF Panel. Move Oxygen Quantity Gage to L. H. Quarter Panel (near Landing Gear Selector).

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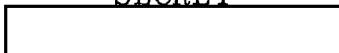
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11. Left Quarter Panel - Move Ram Air Switch to present U2 location above L.G. Selector Switch.

Action: Will conform.

12. Main Instrument Panel -

a. Reverse locations of Heading Situation Indicator and Triple Display Indicator.

b. Landing Gear Indicator - Change to present U2 Indicator.

c. Attitude Indicator should have bank angle indices on top and bottom instead of bottom only.

d. Move Hack Watch and Clock to location above L.II. Systems Panel.

e. Move Delta Counter to Main Instrument Panel near Clock and Hack Watch.

f. Move Master "Caution" to right.

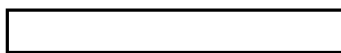
Action: Will conform a, b, d, e, and f.  
On c, will investigate availability of Attitude Indicator with desired markings and will conform if available.

13. Make sure Emergency Gear Release Handle and Nose Pressure Shutoff handles can be reached with suit inflated.

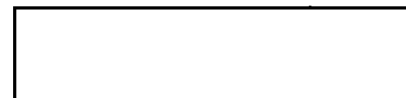
Action: Will locate as required for suit inflated.

14. Where is Canopy Jettison Handle? Present U2 position might snag suit.

Action: Will locate handle on left hand side in a location where suit will not snag.



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15. Paint Fuel Control Selector Switch Guard in barberpole colors as per the Seat "D" Ring.

Action: Will barberpole yellow and black.

16. Pitch Trim Selector Switch - Either guard or have light on Master Caution Panel.

Action: Will add "Auto Pilot Manual Trim" light to Master Caution Panel.

17. On Speed Select - Lever lock switch.  
On Arrest. Hook - Add guard.

Action: Will conform.

18. Add canopy breaker on top of seat.

Action: Will study addition of canopy breaker.

19. Move A/C - D/C Electrical Panel to Right Quarter Panel. Move Auto-Pilot Gains and other switches to panel vacated by A/C - D/C.

Action: Will study possibility of interchanging these panels. Will depend on available room on Quarter Panel.

20. Hatch Heat Switch - Lever lock switch.

Action: Will conform.

21. Move Heater Switches (at present on L.H. side aft of throttle) to R.H. side where Navigation Light Panel is at present. Move Navigation Light Panel to L.H. side area vacated by Heater Switches.

Action: Will conform.



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


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22. Build in present U2 Pilots Packet Holder is possible.

Action: Will investigate provisions for Pilots Packet Holder.


23. Rotate "Drift" gage on lower console Navigation Panel 90° to left if possible.

Action: Will investigate possibility of rotating gage on Panel.

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24. Interchange  Navigation Panel on lower console.

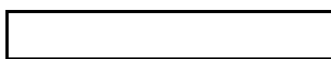
Action: Will conform.

25. Check on reducing extension  aft 25X1  
of Instrument Panel.

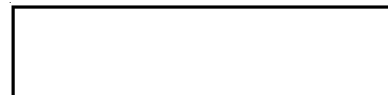
Action: Will investigate and move forward as far as possible.

26. Investigate necessity of sequencing stick kick-over with respect to foot retraction. Is there a possibility of wheel hang-up on pilot's knees during kick-over if feet are retracted first?

Action: ADP will investigate.



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ATTACHMENT III

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### SPARES/ SUPPORT

#### General

1. Review was performed on a "model 351 major assembly spares list" developed by Lockheed. This list is comprised of items or major units that are interchangeable/replaceable and which can be replaced in the field. The quantities recommended therein were factored on an austere basis against the minimum quantity of Articles to be procured initially. Examples of these items are tires, wing tips, canopy glass, windshield assemblies, etc. It was recommended that FAK and Detachment support stocks be provisioned essentially at 75 to 100 percent against the Article inventory. During the course of the conference, a "go-ahead" was given to Lockheed on the above approach.

2. Reviews were also performed of mission equipment requirements using a proposed "Basic Article Configuration" for a planning base line, to include hatches and systems provisions. Tentative GFAE needs were studied. Certain long lead-time items will require further research to ascertain the appropriate source of supply; i.e., GFP or CFP.

3. Lockheed has commenced preparation of AGE listings and was also surveying all present AGE assets for possible utilization on this program.

#### Actions

1. W/R Depot and Lockheed have proceeded into a program of exchanging supply data and lists of available assets for program utilization. Basic premise is to utilize existing assets to the extent possible and restrict new procurement to a minimum.

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Actions (cont'd)

2. W/R Depot will begin provisioning of spares to provide the following:

- a. A minimum quantity for Depot stock.
- b. A minimum quantity for Base stock to support the flight test and training program.
- c. Quantities sufficient for two FAK's in support of Detachment operational requirements.
- d. Quantities sufficient to support two enroute kits with limited, selected items.

3. W/R Depot will also proceed into the provisioning for ground handling and test equipment to support the following:

- a. "Home Base" in support of the flight test and training program.
- b. Two operating locations.

4. In connection with above, Lockheed will provide W/R Depot with a list of ground handling equipment which can be utilized in its present configuration on this program. In addition, Lockheed will provide W/R Depot with a list of ground handling equipment which can be modified economically to support the program.

5. W/R Depot will establish a supply team for continued liaison and coordination with Lockheed support elements in the provisioning and programming that is made for logistics support of this program. Project Headquarters will provide staff supply representation to insure overall logistics interface and apply Headquarters assistance where required.

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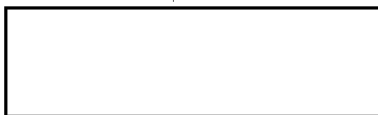
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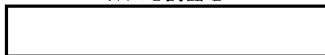
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ATTACHMENT IV

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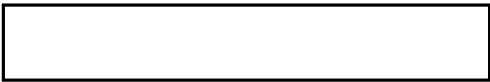
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### COMM/NAV EQUIPMENT

1. The following was agreed to as the base line configuration for Comm/Nav Systems:

a. All aircraft will be configured to accept the following Comm/Nav Systems:

- (1) VHF-101 Radio
- (2) ARC-51 Radio
- (3) 718T6 Radio
- (4) 914XI IFF
- (5) AIC-10 or AIC-18 inter comm (whichever is available).
- (6) 
- (7) ARN-59 ADF
- (8) ARN-52 Tacan and ILS
- (9) Presently used flight reference system plus a self-contained standby attitude indicator.
- (10) APN-153/ASN-66 Navigation System with additional provisions for pilot readout of drift and ground speed.

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2. ADP will look into the possibility of installing voice interrupted priority system (VIPS).

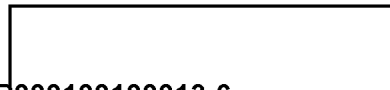
3. All aircraft will be configured to accept the Astro-Science MC recorder with a cable kit to be used for installing FOG recorder.

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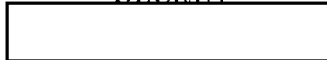
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ATTACHMENT V  
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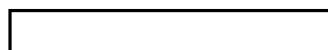
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# IMPROVEMENT/MAINTAINABILITY ITEMS

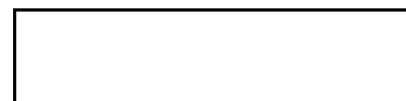
ADP Will

Item	Incorporate	Investigate
1. Parallel "destruct" switch on sill with "destruct" switch actuated by seat during ejection		X
2. Engine inlet scoop leading edge to be replaceable item	X	
3. Yaw Indicator		X
4. Emergency lift spoiler extension with frozen engine		X
5. Make strut inflation valve on tail gear more accessible	X	
6. Quick disconnect fittings on engine oil, CSD oil and engine fuel lines		X
7. Quick change engine accessories		X
8. Time code generator actuate switch in cockpit	X	
9. Bi-polar ignition switch		X
10. Better access to engine oil and sump tank filler caps	X	
11. Closer temperature control on cabin heat	X	

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ADP Will

Item	Incorporate	Investigate
12. More comfortable heel-snatcher spur	X	X
13. Exciter removal without pulling engine	X	
14. Better access to hydro tank and better visibility for accumulator pressure gage.	X	
15. Better means of doing jet cal.		X

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